

- Fig. 6. Male chelicera and palpus. Fig. 7. Female ditto.
 Fig. 8. Inferior view of the maxillary organs, as they appear when distended with spirit; 1, 2, 3, the three anterior coxæ.
 Fig. 9. Internal view of left maxilla of the first pair; *z* is the part by which it is attached to the side of the epistome.
 Fig. 10. External and superior surface of ditto.
 Fig. 11. Internal view of the second pair of maxillæ, to illustrate their connection with the labium.
 Fig. 12. External view of left maxilla of second pair.
 Fig. 13. The labium detached, and viewed from the external surface.
 Fig. 14. One of the appendages to the coxæ of the second pair of legs (left side).

The above are all magnified figures of the objects, as seen under simple lenses, ranging from $1\frac{1}{4}$, $\frac{1}{2}$, to $\frac{1}{4}$ inch, focal length.

[To be continued.]

XX.—*List of Birds obtained in the vicinity of Calcutta, from September 1841 to March 1843 inclusive.* By EDWARD BLYTH, Curator to the Museum of the Asiatic Society of Bengal.

[Continued from p. 101.]

127. *Hirundo rustica*. I have never seen a living swallow since my arrival; but the museum contains an example of this species procured in the neighbourhood.

128. *Motacilla leucopsis*, Gould; *M. alboides*, Hodgson; figured by Sonnerat. Very common during the cool season. This species is even intermediate to the nearly allied *M. alba* and *M. Yarrellii* of Europe: like the latter, it has a black back in summer, and is distinguished from both by the quantity of white on its wings.

129. *M. boarula*. Common in the winter months.

130. *M. variegata*, Vieillot, not of Latham. A remarkable species, of which might be made a separate subdivision. It is nearly related to *Budytes*, but the hind-claw is not lengthened. I procured a single mutilated live specimen from a bazar shikaree, and am told that it may now and then be met with in the mango orchards.

131. *Anthus arboreus* (?). Common in the cool season. Though most closely allied, I am not altogether satisfied of its identity with the species of Europe.

132. *A. Richardi*. Common about rice-fields. This bird is captured in great numbers for the table, and sold with others under the general name of 'Ortolan.' They are brought alive to the bazar, having the feathers of one wing torn out, and very often those of the tail, from the careless manner in which this is done. Hence the mutilated condition of the specimens of Nos. 91, 92, 93 and 130, which I have alone hitherto obtained.

133. *A. agilis*. Common in dry situations during the cool season, much rarer at other times.

134. *Alauda Gangetica*, nobis; *A. gulgula*, Franklin, *apud nos*, Journ. As. Soc. Beng. xi. 201. Common, and frequently sold for the table: breeds in the neighbourhood.

135. *A. gracilis*, nobis, J. A. S. B. *id.* In compliment to those who differ from me in opinion respecting this bird, I shall not here enumerate it as a distinct species, and I much wish to establish its distinctness on the authority of other specimens.

136. *Corypha* (? G. R. Gray) *baghaira*; *Emberiza baghaira*, Franklin; *Alauda Dukhunensis*, Sykes. Brought in immense numbers for the table during March; being the 'Ortolan,' more especially so styled, of Anglo-Indian epicures.

137. *Mirafra Assamensis*, M'Clelland and Horsfield. Often brought to the bazar among the so-called 'Ortolans.' Breeds in the neighbourhood.

138. *M.* (?) *cantans*, Jerdon. The true *Aggan* of India generally. I have obtained one wild-shot specimen, and seen others in cages, they being very highly esteemed for their song.

139. *Pyrrhulauda crucigera*. Common at all seasons, in the localities they frequent.

140. *Euplectes Phillipensis*. Common.

141. *Eu. Bengalensis*. Occasionally procurable in considerable numbers in the shops, being taken in the neighbourhood.

142. *Eu. striatus*, nobis, J. A. S. B. xi. 873. The same remark applies to this species, and I am told that it breeds abundantly in some high reeds a few miles from Calcutta.

143. *Amadina punctata*; *Fringilla punicea*, Horsfield. The immense numbers of amaduvats brought to the shops are, I believe, obtained from some distance.

144. *Spermestes nisorea*; *Munia acuticauda*, Hodgson. Tolerably common.

145. *Sp. melanocephala*; *Munia rubroniger*, Hodgson. Tolerably common.

The Java sparrows (*Sp. oryzivora*) sold in the Calcutta shops are all imported.

146. *Passer domesticus*. As common as in England. I have also specimens from Southern and from Western India, but not any agreeing with the *P. Indicus*, Jardine and Selby. I think, however, that they differ from the British sparrow in having much whiter under-parts.

147. *Emberiza fucata* (?); *E. cia*, apud Jerdon: vide J. A. S. B. xi. 601.

148. *Erythrospiza* (?) *rosea*; *Fringilla rosea*, Vieillot: vide J. A. S. B. xi. 461. Often sold in the shops, and occasionally (as I am informed) shot in the neighbourhood.

149. *Chloropsis aurifrons*; erroneously figured as *Chl. Malabaricus* by Messrs. Jardine and Selby*. Now and then brought in some plenty to the shops, but I have not ascertained it to inhabit this neighbourhood. It is a pleasing songster.

150. *Cinnyris sola*†. Very common.

151. *C. Mahrattensis*. Not rare during the cool season.

* Corrected in description of Pl. C.—ED.

† *C. sola*, Jerdon, and nost. of the Cat. of Indian Birds, is *C. Zeylonica*, Linn.

152. *Dicaeum erythronotum*. Rare.
153. *D. Tickelliae*, nobis; *Nectarinia minima*, Tickell. Very common.
154. *Vinago militaris*. Common.
155. *V. bicincta*, Jerdon. Not rare.
156. *Columba tigrina*. Extremely common.
157. *C. risoria* (?). Tolerably common.
158. *C. meena*, Sykes.
159. *C. humilis*. These two species may often be purchased in the shops, but do not appear to be common in this vicinity.
160. *C. Javanica*. Tolerably common.
161. *C. livia* (?), var. ? *C. aenas*, Sykes and Jerdon. A wild pigeon, which seems to have originated most of the dove-cot pigeons of this part. In the London markets vast numbers of a wild pigeon (all shot birds, and not differing in form or plumage,) may be observed, which essentially resemble *C. livia (vera)*, except that the wings are not barred, but spotted as in *C. aenas*; the Indian bird, on the contrary, has the barred wing, but no white on the rump: among the domestic varieties, however, of the latter may be seen many with spotted wings. It is probable that all three are esculent species, aboriginally distinct, but which readily merge together when domesticated.
162. *Francolinus vulgaris*.
163. *Fr. gularis*.
164. *Fr. Pondicerianus*. These three species are occasionally brought by the bazar shikarees, the second very rarely, and the third most commonly. It is indeed doubtful whether *Fr. gularis* is found in this vicinity, though numerous two or three hundred miles up the river.
165. *Coturnix dactylosans*. The most plentiful species of quail in this part.
166. *C. textilis*. Rare.
167. *C. Phillipensis*. Rare.
168. *C. flavipes*, nobis, J. A. S. B. xi. 808. I have obtained a pair only of this diminutive species, separately, as mentioned in the original description cited.
169. *Turnix taigoor*. Apparently not rare.
170. *T. Dussumieri*. Apparently not rare.
171. *Pavo cristatus*. Wild specimens are occasionally offered for sale alive, but are brought from some distance. They precisely accord with the ordinary (not the japanned) variety of the domestic peafowl in plumage.
172. *Grus cinerea*. Occasionally snared by the shikarees.
173. *Ardea cinerea*. Common.
174. *A. purpurea*. Common.
175. *A. flavirostris*. Not rare. The young bird has a black bill, in which state it is enumerated by Col. Sykes as *A. egretta*.
176. *A. putea*. Named in MS. by Buchanan Hamilton. A middle-sized crestless white egret, with yellow bill and black legs; the former also yellow in the young. Not rare.

177. *Ardea garzetta*. Common.

178. *A. caboga*, v. *russata*. Common. This species rarely fishes, but feeds principally on grasshoppers, habitually following cattle for those they cause to rise, as long ago noticed by Sonnini. Hence it is styled *Ghai-bogla* (Cow Heron) by the Bengalees, which Pennant has corrupted into *caboga*.

179. *A. Javanica*. Common. Generally met with singly, in retired tanks surrounded by jungle. I have just received a specimen from the Mauritius.

180. *A. nigra*, Vieillot. I have reason to believe this beautiful species also occurs here, though I have not yet met with it.

181. *A. Malaccensis*. The ordinary *Paddy bird*, though the white species are often likewise styled so. Remarkable for the diversity of its summer and winter plumage. Extremely common, and very familiar.

182. *Botaurus stellaris*. I have obtained one recent specimen.

183. *B. cinnamomeus*. Not uncommon.

184. *Nycticorax Gardeni*. Not uncommon.

185. *Ciconia alba*. Occasionally met with.

186. *C. leucocephala*; *C. umbellata*, Wagler. Not rare.

187. *Argala migratoria*, Hodgson; *Ciconia argala*, Auct. The gigantic adjutant, or *Hurgalah* of the natives. This immense species visits Calcutta in great numbers during the rainy season, and leaves chiefly in November; a few stragglers only remaining throughout the year. I need hardly remark that it walks tamely about the streets, picking up garbage, surrounded by the kites and crows, and also dogs, which all may be seen together about a heap of rubbish,—three or four of these adjutants, with perhaps one or more of the next species to complete the group; or they rest, statue-like, on the house-tops, one often at each corner of a square building, like so many artificial ornaments. Their various attitudes are highly picturesque, and it is a truly droll sight to observe two of these great gawky birds pulling away at each end of a bit of gut or whatever it may be, with wings expanded, when perchance another gobbles away the prize on a sudden from them both. They vary considerably in shade of colour, the oldest apparently becoming of a lighter gray.

188. *A. capillata* (?); *Ciconia capillata* (?), Tem.; *C. Javanica* (?), Horsfield; *C. nudifrons*, M'Clelland, not of Jerdon; *C. immigratoria*, Hodgson; *C. calva*, Jerdon. I strongly incline to the opinion that all these refer to the same species, though the two first (long since identified) are described to have a reddish-brown spot on each feather of the last range of their middle wing-coverts, which I have found no trace of in the two or three Indian specimens (and one from Maulmain) which I have as yet minutely examined*. The absence of this character induced Dr. M'Clelland to describe his Assamese bird as distinct, and this is decidedly identical with the Nipålese, Bengalese, Southern Indian and Tenasserim species. Though scarcely observed by anybody, this species is common in the vicinity of Cal-

* Possibly the young are so marked, which I must try to ascertain.

cutta throughout the year, but comes less within the town than the preceding one, albeit it is there far from rare; but about a large abattoir on the outskirts of the town it is most numerous. There are two other Indian species of this group, viz. *Ciconia nudifrons*, Jerdon, an inhabitant of the peninsula, and *C. cristata*, M'Clelland, of Assam.

183. *Mycteria australis*. Not rare within a short distance.

190. *Anastomus typhus*. Not rare within a short distance.

191. *Platalea leucorodia*. Not common, but more so in the Soonderbuns. This and the two preceding species are closely allied by affinity to the next or Ibis group.

192. *Tantalus leucocephalus*. I have hitherto obtained but one specimen of this fine species.

193. *Ibis Macei*. Not uncommon.

194. *I. falcinellus*. Not uncommon. The ferruginous colour characterizes the summer plumage only of adults of this species.

195. *Esacus recurvirostris*; *Pseudops* (olim *Carvanaca*) *grisea*, Hodgson. I believe that this species occurs, but not commonly, within a moderate distance up the river.

196. *Ædicnemus crepitans*. I obtained one specimen last cold season in the bazar.

197. *Pluvianus cinereus*, nobis, J. A. S. B. xi. 587. Rather rare.

198. *Pl. Goensis*. Common.

199. *Pl. (Lobivanellus) bilobus*. Rare.

200. *Charadrius Virginianus*, apud Jardine and Selby, being the Indian representative of *Ch. pluvialis*. Very common.

201. *Ch. rufinus*, nobis. Somewhat rare.

202. *Ch. rufinellus*, nobis. Very common.

203. *Ch. minor*; *Ch. Phillipensis*, Jerdon. Common.

204. *Ch. Cantianus*. I obtained a fine pair, separately, during last March.

205. *Squatarola cinerea*. Not common.

206. *Himantopus melanopterus*. Common.

207. *Recurvirostra avocetta*. Far from rare.

208. *Totanus glottoides*. Very common.

209. *T. Horsfieldi*; *Limosa Horsfieldi*, Sykes. This delicate little greenshank is abundant.

210. *T. fuscus*. Tolerably common.

211. *T. calidris*. Very common.

212. *T. glareola*. Excessively common. Several dozens may be procured almost daily at the bazar for four or five months successively.

213. *T. ochropus*. Somewhat rare.

214. *T. hypoleucos*. Less rare than the last, but still far from common.

215. *Limosa melanura*. Tolerably common.

216. *Terekia Javanica*. Rare. I have obtained three specimens in the course of two cold seasons.

217. *Tringa subarquata*. Tolerably common.

218. *Tr. platyrhyncha*. During the first cold season I obtained

but one specimen of this species, but in the second a considerable number have been brought to the bazar; two or three specimens, and sometimes more, being commonly met with of a morning.

219. *Tringa minuta*. Extremely common.

220. *Tr. Temminckii*. During the first cold season I obtained but three or four specimens of this species, but in the second they have been tolerably common.

N.B. I have recently received from Mr. Jerdon a specimen of *Tr. canutus* from the vicinity of Madras.

221. *Machates pugnax*; *Tringa Hardwickii*, Harwicke and Gray, the male, or ruff,—and *Tr. Indica*, *ibid.*, the female, or reeve. Tolerably common, but never met with in breeding plumage.

222. *Numenius arquata*. Common.

223. *Scolopax Gallinago*. Very common.

224. *Sc. heterura*, Hodgson. Common, especially about the commencement and close of the cool season.

225. *Sc. gallinula*. Not rare.

226. *Glareola torquata*. Now and then met with.

227. *Gl. orientalis*. Two or three great heaps of this species were brought to the bazar during last February.

228. *Parra Sinensis*. Tolerably common. I have only seen what is currently regarded as the adult plumage during the hot and rainy seasons, the considerable number brought during the cold season being all in what is considered the immature plumage; but I cannot yet assert that they moult back from the former into the latter.

229. *P. Indica*. Less numerous than the last, but still tolerably common. The adult garb of this species I have obtained at all seasons, the young having been described as a distinct species—*P. arata*, Tickell.

230. *Fulica atra*. Common.

231. *Porphyrio smaragnotus*. Common.

232. *Gallinula chloropus* (?). Common. The size appears to be constantly inferior to that of the European birds.

233. *G. Javanica*. Common.

234. *G. lugubris*, Horsfield. Not rare, as I have been informed, inhabiting the rice-fields; but I have hitherto obtained but one specimen in the neighbourhood.

235. *Porzana rufescens*; *Rallus rufescens*, Jerdon. I have obtained one specimen.

236. *P. maruetta*. Common.

237. *P. rubiginosa*. Not rare.

238. *P. Baillonii*. Common.

239. *Rallus aquaticus*. Apparently not common.

240. *R. gularis*. I have obtained one beautiful pair.

241. *Phænicopterus ruber*. I have obtained several specimens in the bazar.

242. *Anser Indicus*. Common.

243. *A. cinereus*. Less so, but not rare.

244. *Dendrocygna major*, Jerdon. Somewhat rare.

245. *D. arcuata*; *Mareca awsuree*, Sykes. Very common, associating in large flocks.

246. *Nettapus Coromandelicus*; *Anas girra*, Hardwicke and Gray. Very common. It is remarkable that this bird seems totally incapable of standing or walking upon the ground. I have had dozens of them together, unwounded, together with other species, but the gurras invariably fluttered along the ground in a strange scuffling manner, like a wounded bird, though I am told they perch with facility on trees. They always descend into the water, never alighting on the ground of their own accord. The *N. affinis*, Elliot, is merely the winter plumage of this species, wherein the collar is absent.

247. *Casarca rutila*. Common.

248. *Tadorna Bellonii*. Somewhat rare, five or six specimens only appearing in the bazar in the course of a season.

249. *Plectropterus melanotos*. Rare.

250. *Anas caryophyllacea*. Rare.

251. *A. pæcilorhyncha*. Not common.

252. *A. stepera*. Tolerably common.

253. *A. acuta*. Rather more so.

254. *A. querquedula*. Very common.

255. *A. crecca*. Not rare.

256. *A. penelope*. Rather uncommon.

257. *A. clypeata*. Not uncommon.

258. *Fuligula rufina*. Not uncommon.

259. *F. ferina*. Not common.

260. *F. nyroca*. Immense numbers of this species were brought to the bazar during the first cool season, but comparatively very few in the second.

261. *F. cristata*. Rather uncommon.

262. *Podiceps minor*. Abundant.

263. *Plotus Vaillantii*. Not rare. I have kept a living specimen for several months, which is still doing well.

264. *Phalacrocorax Javanicus*. Common.

Ph. carbo is, I believe, to be met with; and I have described a species as *Ph. leucotis*, which there is reason to infer is found in this neighbourhood.

265. *Pelecanus onocrotalus*. The museum contains a fine specimen purchased in the bazar.

266. *P. rufescens*. Not uncommon.

267. *Sterna melanogaster*; *St. Javanica*, Horsfield. Occasionally met with on the river.

268. *St. seena*, Sykes. Now and then obtainable.

269. *St. Caspia*. I have seen this noble species on the wing, as before mentioned.

270. *Sterna anglica*. I have obtained one pair.

271. *Viralva Indica*, Stephens. Tolerably common.

272. *Larus ichthyiaëtus*; *L. Kroikocephalus*, W. Jameson. The museum contains specimens procured in the neighbourhood.

273. *L. brunnicephalus*, apud Jerdon. Tolerably common.

274. *L. ridibundus*. I have procured one example.

This list of birds would doubtless have been considerably augmented, had I devoted my time more exclusively to ornithology, or

if I had personally hunted for them oftener, to judge from the success which has attended my few attempts in this way; but I have the whole vast range of zoology to engage my attention, to the extent of my abilities, and to that of my physical capabilities in this climate, which does not permit of such exertions as, in Europe, would be easily practicable. Indeed, I have had experience of the penalties which too much enthusiasm, under a burning sun, is apt to entail. Several species have been here indicated by name, which have long been described by me, but are not yet published, though they probably will be before this article is printed; and to the 'Journal of the Asiatic Society of Bengal' I therefore refer the reader for the descriptions adverted to. The present list has also been hastily drawn up, under pressure of other occupation; but I know full well how little chance I have of a season of coming leisure, and have therefore obeyed at once the impulse to prepare such a catalogue as I have now the pleasure of submitting to the notice of the readers of the 'Annals and Magazine of Natural History.'

Calcutta, April 13, 1843.

XXI.—*Descriptions of two species of British Jungermanniæ.*

By THOMAS TAYLOR, M.D., Dunkerron, Kenmare*.

JUNGERMANNIA FRAGILIFOLIA, MSS. *T. T.* Caule procumbente, subpinnato; ramis complanatis, alternis, remotiusculis, subcurvis; foliis patentibus, subimbricatis, adscendentibus, ex angustiori basi oblongo-rotundatis, recurvatis, integerrimis; auriculis oblongo-galeiformibus; stipulis obovato-rotundatis, apice bifidis, integerrimis: foliis perichætalibus obtuse pauci-dentatis; calyce obovato-cordato, tubifero; perigonio subrotundo.

On mural rocks, accompanied by *Jung. dilatata* and *Jung. Tamarisci*, near Dunkerron, county of Kerry, 1829.

This species scarcely exceeds half an inch in length, is of a dusky reddish-brown colour, and collected into thin patches firmly attached to the rock's surface, or more rarely to the barks of trees. The branches are scarcely disposed in a pinnate manner, they are sometimes fastigiatae on one side. When wet the leaves ascend so as not to touch one another, hence any pressure on their surface is felt on the points of their connexion with the stem; such connexion is so frail that the top of the finger pressed against the surface of the wet plant removes a multitude of leaves adhering, so that, however paradoxical it may appear, a blind man may recognise this species. The cells of the leaves are large in proportion to the size of the plant; and a few of the cells, sometimes disposed in lines as in *Jung. Tamarisci*, at other times irregularly dispersed, are larger, more opaque, and more intensely coloured

* Read before the Botanical Society of Edinburgh.